

12510500 Yakima River at Kiona, WA

WATER-QUALITY STATION ANALYSIS—WY1999–WY2000

SAMPLING LOCATION—Samples were taken from the cableway.

SAMPLING METHODS—EWI samples for the cone splitter and churn were obtained from 10 verticals using a D77 brass with coating sampler with 3-liter teflon bottle. Samples for the analysis of major ions, nutrients, and trace elements were composited and split using the churn, whereas samples for the analysis of organic compounds, dissolved and suspended organic carbons, and suspended sediment were taken from the cone splitter. Water was directly filtered and/or preserved, if needed, and then chilled. Samples for chemical analyses were shipped via FedEx to NWQL the same day. Suspended sediment samples were taken to Cascade Volcano Observatory Sediment Lab for analysis.

Basic field parameters (air temperature, water temperature, barometric pressure, dissolved oxygen, pH, specific conductance, alkalinity) were measured at every visit. Dissolved oxygen and water temperature were measured mid-channel, whereas specific conductance and pH were measured on aliquots from the composited sample. Alkalinity was determined from a filtered sample taken from the composited sample.

Turbidity was determined from an aliquot taken from the composited sample using the Hach 2100N Turbidimeter. These analyses were performed either by Jan O'Neil in the Pasco Field Office or Bill Rice (Roza-Sunnyside Board of Joint Control) in the Sunnyside Valley Irrigation District lab space.

Continuous streamflow, water temperature, and specific conductance were recorded hourly and published for the year. For more details, see the records from the Pasco Field Office.

SAMPLING PROGRAMS—High intensity phase (HIP) integrator site for the National Water-Quality Assessment (NAWQA) Program visited from May 1999–September 1999 (irrigation season) on a biweekly basis and from October 1999–January 2000 (nonirrigation season) on a monthly basis. Yakima River at Kiona was also sampled three times during the August 1999 synoptic sampling.

Suspended sediment: Every sampling 16 visits

SH 2075 SOC/DOC: Every sampling, 16 visits

SH2701 Major ions: Once a month (except September), 11 visits

SH2702 Nutrients: Every sampling, 16 visits

SH2703 Trace elements: Every sampling (switched to SH2710 for the Jan 2000 sampling), 15 visits

SH2710 Trace elements: January 2000, 1 visit

SH2001 Pesticides in filtered water: Every sampling, 16 visits

LC9060 Pesticides in filtered water: Every sampling, 16 visits

LC9002 Pesticides and degradation products in filtered water: Once during the August 1999 synoptic sampling and every sampling from November 1999–January 2000, 4 visits

LC8398 Custom organochlorine compounds in whole water (SH1398 plus o,p'-DDX, cis-nonachlor, o,p'-methoxychlor, and oxychlordanes): Every other sampling during irrigation season and every sampling during nonirrigation season, 11 visits

Quality-control samples were taken as follows:

May 19	SH2001 blank; LC9060 blank; LC8398 blank; SH2075 blank; SH2701 blank; SH2703 blank; suspended sediment blank; turbidity blank
June 9	alkalinity replicate
June 30	turbidity replicate
July 13	Suspended sediment replicate; alkalinity replicate
July 29	SH2001 replicate, lab spike, and spike replicate; SH2075 replicate; alkalinity rep.
August 5	SH2001 lab spike; LC9060 lab spike; LC9002 replicate; LC8398 replicate; SH2075 replicate; SH2702 replicate
August 24	LC9060 lab spike; alkalinity replicate
August 31	SH2702 replicate
September 21	SH2001 lab spike and spike replicate; LC9060 lab spike and spike replicate; SH2703 standard reference sample; alkalinity replicate
October 19	SH2001 blank; alkalinity replicate
November 18	SH2001 replicate and lab spike; SH2075 replicate; SH2702 blank; SH2703 blank
December 7	SH2701 replicate; alkalinity replicate
January 13	LC9060 replicate and lab spike; alkalinity replicate

REMARKS AND REVIEW OF DATA—

Data to be included in Annual Data Report: discharge, field parameters (barometric pressure, air temperature, water temperature, pH, dissolved oxygen, specific conductance, alkalinity), suspended sediment, SH2075, SH2701, SH2702, SH2703, SH2710, SH1398, SH2001

Data not to be included in Annual Data Report: Turbidity, LC8398 custom parameters (o,p'-DDX, cis-nonachlor, o,p'-methoxychlor, oxychlordane), LC9060, LC9002

Comments about specific values:

Air temperature (P00020)	Values missing for May 19, June 9, July 13, August 5, August 6, and August 24 because field personnel did not measure air temp
Carbonate (P00452)	Values missing for August 5 and August 6 (at 1510) because field personnel missed the first endpoint (beginning pH>8.3); reported as missing rather than 0
Dissolved P (P00666) Orthophosphate (P00671)	Values for June 30 of P00666=0.033 and P00671=0.046 were verified; values are within analytical error range
Diss Organic C (P00681)	Value removed for May 19 (56 mg/L) because value is anomalous; most likely due to contamination (methanol?)
Sus Organic C (P00689)	Value missing for August 24 because sample was ruined at NWQL
Turbidity (P00076)	Value missing for August 6 (at 1030) because field personnel did not collect an aliquot for turbidity; turbidity will not be published in ADR

- Chromium (P01030) Values for June 9 (0.04), August 5 (0) and August 6 at 1030 (0.1) were determined by LC1936 (GFAA) rather than LC1789 (ICP-MS); at this time, NWQL is trying to figure out how to handle this data electronically; for the ADR, the values have been entered in NWIS as <1 (MRL in place then)
- Methoxychlor (P39480) Value for June 17 (E0.001) is listed as M (Presence of material verified but not quantified) when rounded out of NWIS; these values need to be hand-entered into the ADR; request to have Scott Knowles add "p,p'" to column heading for ADR tables (see DDX species); o,p'-methoxychlor was analyzed as part of custom LC8398; even though the o,p'-methoxychlor data will not be in the ADR, this name change will hopefully prevent future confusion
- Sus sed % finer (P70331) Values for July 29, September 21, October 19, and January 13 were removed; not reporting % finer values (P70331) for sus sed concentrations (P80154) less than 15 mg/L; values for May 19 (25%) and September 21 (28%) verified by CVO, noted that they did have more sand present than others; sand may have been inadvertently picked up from the streambed, but suspended sediment concentrations (P80154) are not anomalous so values are retained